

**Patent Claims**

1. A stack plate-type heat exchanger (1), comprising a large number of plates (23, 24) which are in the form of troughs and are stacked one inside the other, of a first and of a second type, which, between them, form flow channels (25, 26) with a first height  $h$  for a first medium and with a second height  $H$  for a second medium, with the plates (23, 24) having rims which are raised on the circumference, are soldered to one another and have different heights for the first and for the second plate type, **characterized** in that the first plate type (23) has a rim (23a) of height  $h_1$  with a flank angle  $\alpha$ , and the second plate type (24) has a higher rim which is composed of at least three sections (24a, 24b, 24c) of height  $H_1$ ,  $H_2$  and  $H_3$ , with the first rim section (24a) whose height is  $H_1$  and the third rim section (24c) whose height is  $H_3$  each having a flank angle  $\alpha$ , while the second rim section (24b) whose height is  $H_2$  runs at right angles to the plate base (24e).

2. The plate-type heat exchanger as claimed in claim 1, **characterized** in that the plates of the first and of the second type (23, 24) are stacked alternately, so that adjacent flow channels (25, 26) have different channel heights  $h$ ,  $H$ .

3. The plate-type heat exchanger as claimed in claim 1 or 2, **characterized** in that the ratio of the channel height  $H$  to the channel height  $h$  is in the range from 1.5 to 10.

4. The plate-type heat exchanger as claimed in one of claims 1 to 3, **characterized** in that a second section (23b) with an insertion flank, a flank angle  $\beta$  and a height  $h_2$  is adjacent to the first rim section (23a) of the first plate type (23), where  $\beta > \alpha$ .

5. The plate-type heat exchanger as claimed in one of claims 1 to 4, **characterized** in that a fourth section (24d) with an insertion flank, a flank angle  $\beta$  and a height H4 is adjacent to the third rim section (24c) of the second plate type (24).

6. The plate-type heat exchanger as claimed in one of claims 1 to 5, **characterized** in that means for production of vortices (6, 7) are arranged between the plates (2, 2a; 3, 3a) and in the area of the flow channels (4, 5).